

## SWS L2B 12.5km Data Structure

Except for the wvc\_row\_time, each entry in this table represents a unique HDF SDS object. The wvc\_row\_time is stored in an HDF Vdata object. The name of each Level 2B HDF object is the same as the name of the data element that the HDF object stores.

With the exception of wvc\_row, every SDS object is an array of at least two dimensions. In every case, the first array index specifies the wind vector cell row while the second array index specifies a wind vector cell in that row. For all three dimensional SDSes in the Level 2B Product, the third dimension represents one of the wind solution ambiguities.

For example, data elements wvc\_row[256] and wvc\_row\_time[256] reference the same wind vector cell row. Data elements wvc\_lon[256,12] and num\_ambigs[256,12] represent the same wind vector cell. Data elements wind\_dir[256,12,1] and wind\_speed[256,12,1] represent the same ambiguity in the same wind vector cell.

The following table lists each element in the Level 2B 12.5km Data:

**Data Structure**

Element Name	Conceptual Type	Storage Type	Repetition	Scale	Minimum	Maximum
wvc_row_time	time	char	[3248]	n/a	1993-001T00:00:00.000	2016-366T23:59:60.999
wvc_row	integer	int16	[3248]	1	1	3248
wvc_lat	real	int16	[3248,152]	0.01	-90.00	90.00
wvc_lon	real	uint16	[3248,152]	0.01	0.00	359.99
wvc_index	unsigned integer	uint8	[3248,152]	1	1	152
num_in_fore	integer	int8	[3248,152]	1	0	32
num_in_aft	integer	int8	[3248,152]	1	0	32
num_out_fore	integer	int8	[3248,152]	1	0	32

num_out_aft	integer	int8	[3248,152]	1	0	32
wvc_quality_flag	enum	uint16	[3248,152]	1	0x0000	0xFFFF
atten_corr	real	int16	[3248,152]	0.001	0	32.767
model_speed	real	int16	[3248,152]	0.01	0.00	70.00
model_dir	real	uint16	[3248,152]	0.01	0.00	359.99
num_ambigs	integer	int8	[3248,152]	1	0	4
wind_speed	real	int16	[3248,152,4]	0.01	0.00	50.00
wind_dir	real	uint16	[3248,152,4]	0.01	0.00	359.99
wind_speed_err	real	int16	[3248,152,4]	0.01	0.00	50.00
wind_dir_err	real	int16	[3248,152,4]	0.01	0.00	180.00
max_likelihood_est	real	int16	[3248,152,4]	0.001	-30.0	0.0
wvc_selection	integer	int8	[3248,152]	1	0	4
wind_speed_selection	real	int16	[3248,152]	0.01	0.00	50.00
wind_dir_selection	real	uint16	[3248,152]	0.01	0.00	359.99
mp_rain_probability	real	int16	[3248,152]	0.001	-3.000	1.000
nof_rain_index	unsigned integer	uint8	[3248,152]	1	0	250
amstr_rain_indicator	real	int16	[3248,152]	0.01	-20.00	100.00
srad_rain_rate	real	int16	[3248,152]	0.01	0.000	50.000

## wvc\_quality\_flag

This flag indicates the quality of wind retrieval within a given wind vector cell. The quality of wind retrieval is based on the number and the quality of the sigma0 measurements within the cell. If the Wind Retrieval Flag (bit 9) is set, then all of wind measurement parameters for the associated wind vector cell contain null values.

The significance of each of the bit flags is as follows:

Bit	Definition
0	<b>Adequate Sigma0 Flag</b> 0 - Adequate good sigma0s available for wind retrieval. 1 - Not enough good sigma0s available for wind retrieval.
1	<b>Adequate Azimuth Diversity Flag</b> 0 - Good azimuth diversity among sigma0s for wind retrieval. 1 - Poor azimuth diversity among sigma0s for wind retrieval.
2	<b>Attenuation Method Data Flag</b> 0 - AMSR used to correct sigma0s for atmospheric attenuation. 1 - Map used to correct sigma0s for atmospheric attenuation.
3-4	<b>Available AMSR Attenuation Flag</b> 0 - All of the wind vector cell sigma0s have AMSR attenuation. 1 - N/A 2 - Some of the wind vector cell sigma0s have AMSR attenuation. 3 - None of the wind vector cell sigma0s have AMSR attenuation.
5-6	<b>AMSR Weather Condition Flag</b>

- 0 - Collocated AMSR brightness temperatures indicate clear weather for all sigma0s used in wind retrieval.
- 1 - Collocated AMSR brightness temperatures indicate light rain for at least one sigma0 used in wind retrieval, no sigma0s are associated with heavy rain.
- 2 - Collocated AMSR brightness temperatures indicate heavy rain for at least one sigma0 used in wind retrieval.
- 3 - Unable to determine weather conditions with AMSR data.

- 7 Coastal Flag
  - 0 - No land mass was detected within the wind vector cell.
  - 1 - Some portion of the wind vector cell is over land.
- 8 Ice Edge Flag
  - 0 - No ice was detected within the wind vector cell.
  - 1 - Some portion of the wind vector cell is over ice.
- 9 Wind Retrieval Flag
  - 0 - Wind retrieval performed for wind vector cell.
  - 1 - Wind retrieval not performed for wind vector cell.
- 10 High Wind Speed Flag
  - 0 - Reported wind speed is less than or equal to 30 m/sec.
  - 1 - Reported wind speed is greater than 30 m/sec.
- 11 Low Wind Speed Flag
  - 0 - Reported wind speed is greater than or equal to 3 m/sec.
  - 1 - Reported wind speed is less than 3 m/sec.
- 12 Multidimensional Histogram (MUDH) Rain Flag Usable

0 - The MUDH rain flag for the wind vector cell is usable.

1 - The MUDH rain flag for the wind vector cell is not usable.

13                      Multidimensional Histogram (MUDH) Algorithm Rain Flag

0 - The MUDH algorithm does not detect rain.

1 - The MUDH algorithm detects rain.

14                      Available Data Flag

0 - Inner beam data with SeaWinds view forward and aft and outer beam data with SeaWinds view forward and aft are available.

1 - Data from at least one of the four possible beam and view combinations are not available.

15                      Spare

HDF_model:	scientific data set
conceptual_type:	enum
storage_type:	uint16
number_of_bytes:	2
units:	n/a
minimum_value:	0x0000
maximum_value:	0xFFFF
scale_factor:	1